

Title (en)

Cooling device, electronic apparatus and method of attaching cooling device

Title (de)

Kühlvorrichtung, elektronische Vorrichtung und Verfahren zur Befestigung der Kühlvorrichtung

Title (fr)

Dispositif de refroidissement, appareil électronique et procédé de fixation d'un dispositif de refroidissement

Publication

EP 2858108 A3 20150708 (EN)

Application

EP 14185326 A 20140918

Priority

JP 2013207602 A 20131002

Abstract (en)

[origin: EP2858108A2] A cooling device includes a cooling member connected with a cooling pipe through which a cooling medium flows, a first fastening mechanism part provided at a first position on the cooling member and configured to fasten the cooling member and a substrate in a state where an electronic part to be cooled is sandwiched between the cooling member and the substrate, and a second fastening mechanism part provided at a second position on the cooling member that is different from the first position, the second position being located at a position where a first load exerted on the cooling member and a second load exerted on the cooling member maintain a balance in the electronic part, the first load being applied by the cooling pipe and the first fastening mechanism part, the second load being applied by the second fastening mechanism part.

IPC 8 full level

H01L 23/40 (2006.01); **H01L 23/473** (2006.01)

CPC (source: EP KR US)

H01L 23/4006 (2013.01 - EP US); **H01L 23/473** (2013.01 - EP US); **H05K 7/20** (2013.01 - US); **H05K 7/20218** (2013.01 - KR); **H05K 7/20245** (2013.01 - KR); **H01L 2023/4081** (2013.01 - EP US); **H01L 2924/0002** (2013.01 - EP US); **Y10T 29/49826** (2015.01 - EP US)

Citation (search report)

- [XI] US 5089936 A 19920218 - KOJIMA HIROYUKI [JP], et al
- [XI] EP 0236065 A2 19870909 - NEC CORP [JP]

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2858108 A2 20150408; **EP 2858108 A3 20150708**; CN 104519721 A 20150415; JP 2015073004 A 20150416; JP 6135434 B2 20170531; KR 20150039561 A 20150410; US 2015092347 A1 20150402

DOCDB simple family (application)

EP 14185326 A 20140918; CN 201410504365 A 20140926; JP 2013207602 A 20131002; KR 20140129113 A 20140926; US 201414484859 A 20140912